

5. What are different characteristics of processing of ceramics and give its applications.
6. (a) Give classification and application of liquid crystal.
(b) Give the detailed information about synthesis of nanophase materials and also give applications.
7. Give detailed information about principle, construction and working of Scanning Electron Microscopy (SEM).
8. Give detailed information about principle, construction and working of Transmission Electron Microscopy (TEM).

Exam. Code : 209004
Subject Code : 4900

M.Sc. Physics 4th Semester
PHYSICS OF MATERIALS
Paper : Phy-554

Time Allowed—2 Hours] [Maximum Marks—100

Note :— There are **eight** questions of equal marks. Candidates are required to attempt any **four** questions.

1. By giving basic idea about vacuum, explain principle and working of diffusion pump.
2. (a) Difference between hot cathode ionization gauge and cold cathode ionization gauge with the help of working process.
(b) Explain the working process of Penning gauge in brief.
3. Explain the following measurement techniques of thickness in thin films:
 - (i) Film resistance method
 - (ii) Optical method.
4. Explain the following deposition techniques of thin film:
 - (i) Spray pyrolysis
 - (ii) Sputtering.